

# Claims

- [c1] 1.A method of building a defect database, the defect database comprising a defect classification recipe which is used for a defect classification machine to perform an automatic defect classification, the method of building the defect database comprising following steps:  
providing a wafer with a plurality of defects thereon that were generated during a first semiconductor process;  
performing a defect inspection to detect the defects;  
providing a defect database which comprises a defect classification recipe corresponding to a second semiconductor process;  
performing an automatic defect classification according to the defect classification recipe to separate the defects into a plurality of defect types;  
performing a manual defect classification to separate the defects into a plurality of defect types; and  
performing a verifying step to verify accuracy of the automatic defect classification for each defect type.
- [c2] 2.The method of claim 1 further comprising a step of updating the defect database if the accuracy of the automatic defect classification is not qualified.

- [c3] 3.The method of claim 2 wherein the step of updating the defect database comprises:  
collecting defect information of the defect types to which the automatic defect classification is insensitive to according to a result of the manual defect classification;  
correcting the defect database according to the defect information; and  
performing the verifying step again.
- [c4] 4.The method of claim 1 wherein the second semiconductor process is a previous generation process compared to the first semiconductor process with the same design rule.
- [c5] 5.The method of claim 1 wherein the first semiconductor process and the second semiconductor process have similar patterns or defect types.
- [c6] 6.A method of an automatic defect classification comprising:  
providing a wafer with a plurality of defects thereon that were generated during a first semiconductor process;  
performing a defect inspection to detect the defects;  
providing a defect database which comprises a defect classification recipe corresponding to a second semiconductor process; and

performing an automatic defect classification according to the defect recipe to separate the defects into a plurality of defect types.

[c7] 7.The method of claim 6 further comprising a verifying step to verify accuracy of the automatic defect classification for each defect type.

[c8] 8.The method of claim 7 wherein the verifying step comprises following steps:  
performing a manual defect classification; and  
verifying the accuracy of the automatic defect classification according to a result of the manual defect classification.

[c9] 9.The method of claim 7 further comprising a step of updating the defect database if the accuracy of the automatic defect classification is not qualified.

[c10] 10.The method of claim 7 wherein the step of updating the defect database comprises:  
collecting defect information of the defect types which the automatic defect classification is insensitive to according to a result of the manual defect classification;  
correcting the defect database according to the defect information; and  
performing the verifying step again.

- [c11] 11.The method of claim 6 wherein the second semiconductor process is a previous generation process compared to the first semiconductor process with the same design rule.
- [c12] 12.The method of claim 6 wherein the first semiconductor process and the second semiconductor process have similar patterns or defect types.